

Sources of gauge anomalies

- 1) Ward - wolf (arbitrary renormalization
gives rates 20% mass)
- 2) electron - proton duality scattering
symmetry point violation effects
with polarized electrons and to
use neutral current as fraction
of energy - Sloe 1978
- Present and Taylor
- 3) Optical coherent in atoms like Rb and
hydrogen.
- 4) prediction of charm due to non-universality
of Higgs - decay does not
 $\bar{t} \rightarrow \mu^+ \mu^- \text{ etc.}$
- 5) ν scattering, scattering rates $\nu + p \rightarrow \nu + p$.
QED $R = \frac{e^+ e^- \rightarrow \text{hadrons}}{e^+ e^- \rightarrow \text{neutrals}}$
or further of ways
- 6) Deep inelastic $e^- p$ scattering
described non-universal, mass
dependent, etc.
- 7) jet phenomena. 2-jet/3-jet
in $e^+ e^- \rightarrow \text{hadrons}$
- 8) SUT - proton decay.

MR

localizing the photon $\frac{\hbar c}{m_e} \times \sqrt{1-\beta^2} \rightarrow$ locants einkreiseln

$$= \frac{\hbar c}{E}$$

für Photon $E = h\nu$

so localizat. $\approx \frac{c}{\nu} = \lambda$.
